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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,499	09/26/2003	Kazuo Shimizu	2003-1274A	8618

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EXAMINER

SHAKERI, HADI

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Applicati n N .</b>	<b>Applicant(s)</b>	
	10/670,499	SHIMIZU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hadi Shakeri	3723	

**-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>110503</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-5, drawn to polishing apparatus, classified in class 451, subclass 006.
  - II. Claims 6-11, drawn to electrolytic polishing apparatus, classified in class 204, subclass 224M.
  - III. Claims 12-15, drawn to polishing method, classified in class 451, subclass 041.
2. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different mode of operation and different functions, i.e., the apparatus as shown in Figs. 1-2 has different mode of operation, different function and different effect than the apparatus as shown in Figs. 4A-5B.
3. Inventions III and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus, e.g., apparatus not requiring a film thickness measuring device embedded in a polishing table having a polishing surface.
4. Inventions III and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process

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as claimed can be practiced by another materially different apparatus, e.g., apparatus not requiring a process electrode in contact with or close to a workpiece and a feeding electrode to supply power to the workpiece.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and the search required for anyone the Groups is not required for the other two Groups, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Mr. Pedersen on Wednesday January 19, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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10. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, the language as written, i.e., "...device has a radial length larger than a radius of the workpiece" renders the claim indefinite, for the scope is unascertainable. Firstly the device is recited to include a light source, a spectroscope and a charged coupled device, thus it is unclear what a radial length may comprise, i.e., a length of these components together or of one these component or a combination thereof, and secondly the length is being limited compared to a workpiece. A size of a workpiece is not defined, so the limitation becomes relative without any range or limit set by the claim or the specification as originally filed.

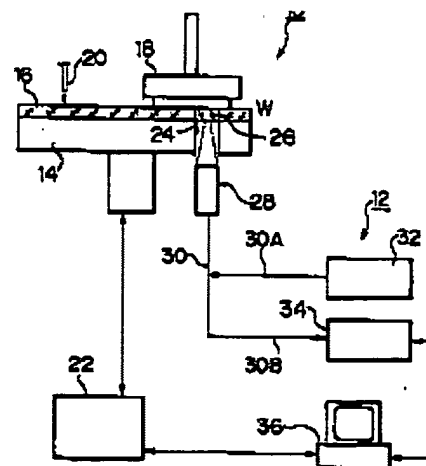
### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. (6,511,363) in view of Wiswesser et al. (6,716,085).

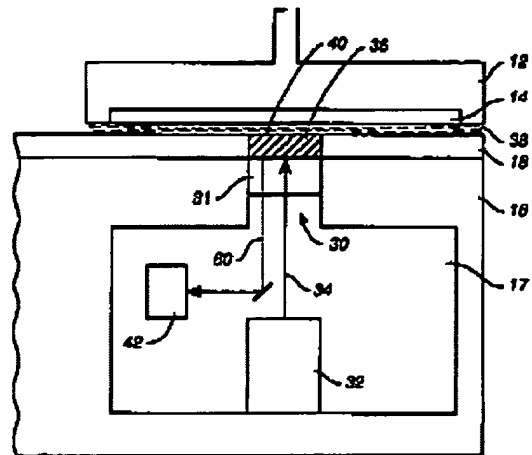
Yamane et al. meets all of the limitations of claim 1, i.e., a polishing table (14) having a polishing surface (16); a top ring (18) for holding a workpiece to be polished and pressing the workpiece against said polishing surface on said polishing table; a film thickness measuring device (12), said film thickness measuring



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device including, a light source (32) for applying light having a predetermined wavelength to a surface of a workpiece; and spectroscope (34) for separating light reflected from the surface of the workpiece; a charge coupled device array (48) for capturing light separated by said spectroscope; and a controller operable to analyze information captured by said charge coupled device array over an entire surface of the workpiece to obtain a film thickness at a desired point on the surface of the workpiece., except for the film thickness measuring to be embedded in the polishing table.

Wiswesser et al. teaches a CMP apparatus with endpoint detection wherein the film thickness measurement device is embedded in the platen or alternatively it may be located below the platen (03:56-



57). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Yamane et al. with the film measurement device embedded in the platen as taught by Wiswesser et al., as an alternative means for economical reasons or to better protect the device.

Regarding claims 2-4 (as best understood), Yamane et al. as modified by Wiswesser et al., meets the limitations, i.e., wherein the light capturing device is capable of receiving light having a single wavelength or a plurality of wavelength.

Regarding claim 5, Yamane et al. as modified by Wiswesser et al., meets all of the limitations, except for specifically disclosing a controller that filters a wavelength influenced by a polishing liquid. Wiswesser et al., however, teaches avoiding wavelengths that cause scattering (05:5-44), and the controller as disclosed by prior art is capable of meeting the functional language. It would have been obvious to one of ordinary skill in the art, at the time the invention

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was made, to further modify the invention of Yamane et al. in view of Wiswesser et al., in adapting the controller to filter wavelength influenced by the slurry in reducing the amount of scattering.

### ***Conclusion***

13. Prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Zarowin et al., Nyui et al., Swedek et al., and Birang et al. are cited to show related inventions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Shakeri whose telephone number is (571) 272-4495. The examiner can normally be reached on Monday-Thursday.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hadi Shakeri  
Primary Examiner  
Art Unit 3723  
January 19, 2005